LOW DOSE HEPARIN LOCK MAINTAINS TUNNELLED HEMODIALYSIS CATHETER PATENCY WHEN COMPARED WITH HIGH DOSE HEPARIN

Heparin is commonly used after hemodialysis treatments as a locking solution to prevent catheter thrombosis. The comparative efficacy and safety of different heparin concentrations to maintain catheter patency has been previously reported in retrospective studies. The authors conducted a prospective, randomised, controlled study of 1000 U/mL heparin (low dose) versus 5000 U/mL heparin (high dose) locking solution to maintain patency of tunnelled catheters.

One hundred patients receiving chronic, unit-based hemodialysis with newly placed tunnelled hemodialysis catheters (less than 1 week) were randomly assigned to either low dose (n = 48) or high dose heparin (n = 52). Overall rate of catheter patency loss was 33% of catheters by 90 days. There was no significant difference in time to malfunction of catheters locked with low dose or high dose heparin. Time to catheter malfunction was not associated with diabetic, hypertensive or smoking status. There was no difference in mean delivered blood flow rate, venous and arterial pressure, and dialysis adequacy between low dose and high dose groups. No patient suffered a hemorrhagic complication requiring hospitalisation during the study period.

SOURCE: Ginger Chu, Gemma Fogarty, Leanne Avis, Shauna Bergin, Patrick McLelland, Alastair Gillies and Peter Choi (2016) Low dose heparin lock (1000 U/mL) maintains tunnelled hemodialysis catheter patency when compared with high dose heparin (5000 U/mL): a randomised controlled trial. Hemodialysis International, published online Feb 2. doi: 10.1111/hdi.12401

NEUTROPHIL EXTRACELLULAR TRAPS ARE ASSOCIATED WITH INFLAMMATION IN CHRONIC AIRWAY DISEASE

Neutrophil extracellular traps (NETs) are web-like structures comprising DNA and antimicrobial proteins, expelled from neutrophils during NETosis. Persistence of NETs can be pro-inflammatory, yet their role in respiratory disease remains unclear. This study aimed to investigate the presence of NETs in sputum from patients with asthma and COPD, and the relationship of NETs with inflammatory phenotype and disease severity.

Sputum eDNA and NET neutrophil antimicrobial proteins were significantly elevated in asthma and COPD compared with healthy controls. Levels of eDNA and NET components were significantly higher in neutrophilic versus non-neutrophilic asthma and COPD. NETs were clearly visualized in sputum smears. PAD4 mRNA was upregulated in neutrophilic COPD. The level of eDNA was higher in severe asthma. High eDNA levels were associated with heightened innate immune responses, including elevated CXCL8 and IL-1β, and NLRP3 gene expression in both COPD and asthma. Antimicrobial proteins and eDNA were positively correlated with airway neutrophils, and negatively correlated with lung function and symptoms.

NETs are present in the airways of subjects with asthma and COPD. Accumulation of excessive NETs was associated with activation of innate immune responses contributing to disease pathogenesis in chronic airway disease.

**RECENT ARTICLES**

NB. Articles in dark blue or bold text have Australian content


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**NEW AUDIO DIGEST CDs (PSYCHIATRY)**

**Prescription drug abuse and mental illness** 44(23) 2015

Scope of the problem / Epidemiology Clinical characteristics / Impact on the therapeutic relationship / Self-medication The prescribing relationship Psychotherapy / Conclusions

Antipsychotic review 44(24) 2015

Prescribing antipsychotics to pediatric patients / Update on psychopharmacology for psychotic disorders

**NICE (UK) DRAFT GUIDANCE RECOMMENDS NIVOLUMAB FOR ADVANCED SKIN CANCER**

The National Institute for Health and Care Excellence (NICE) recently recommended nivolumab (also called Opdivo) for treating advanced skin cancer. Research has found that patients survive much longer on the drug than those given conventional chemotherapy. The one-year survival rate was 73% for those on nivolumab compared with 42% for chemotherapy. Nivolumab targets and blocks a protein (PD-1) on the surface of certain immune cells (T-cells). Blocking PD-1 activates T-cells to find and kill cancer cells. Read more...

NB. The TGA recently approved the use of nivolumab in Australia to treat patients with advanced squamous non-small cell lung cancer and advanced melanoma.

**ANY SUGGESTIONS?**

The staff of HNE Health Libraries value your input. We appreciate any recommendations or suggestions and are happy to discuss them.

**MENTAL HEALTH SERVICES: IN BRIEF 2015**

This report from AHW provides an overview of data about the national response of the health and welfare system to the mental health care needs of Australians.
AMERICAN COLLEGE OF RHEUMATOLOGY GUIDELINE FOR THE TREATMENT OF RHEUMATOID ARTHRITIS

The guideline covers the use of traditional disease-modifying antirheumatic drugs (DMARDs), biologic agents, tofacitinib, and glucocorticoids in early and established rheumatoid arthritis. In addition, it provides recommendations on using a treat-to-target approach, tapering and discontinuing medications, and the use of biologic agents and DMARDs in patients with hepatitis, congestive heart failure, malignancy, and serious infections.


HARMS OF BREAST CANCER SCREENING

False-positive results are common and are higher for annual screening, younger women, and women with dense breasts. Although over-diagnosis, anxiety, pain, and radiation exposure may cause harm, their effects on individual women are difficult to estimate and vary widely.


HIGH-DOSE VITAMIN D FOR PREVENTION OF FUNCTIONAL DECLINE

Although higher monthly doses of vitamin D were effective in reaching a threshold of at least 30 ng/mL of 25-hydroxyvitamin D, they had no benefit on lower extremity function and were associated with increased risk of falls compared with 24,000 IU.


ANTIDEPRESSANTS DOUBLE THE RISK OF AGGRESSION AND SUICIDE IN CHILDREN

Children and adolescents have a doubled risk of aggression and suicide when taking one of the five most commonly prescribed antidepressants, according to a recent Danish systematic review which analysed clinical study reports, prepared by pharmaceutical companies for market authorisation, and summary trial reports. However, the true risk for all associated serious harms (such as deaths, aggression, akathisia and suicidal thoughts and attempts) remains unknown for children, adolescents and adults – due to the poor design of clinical trials that assess these antidepressants, and the misreporting of findings in published articles.

READ MORE...

CONTROVERSY CONTINUES OVER THE PACE CHRONIC FATIGUE SYNDROME STUDY

The adaptive Pacing, graded Activity and Cognitive behaviour therapy: a randomised Evaluation (PACE) trial found that, when added to specialist medical care (SMC), cognitive behavioural therapy (CBT), or graded exercise therapy (GET) were superior to adaptive pacing therapy (APT) or SMC alone in improving fatigue and physical functioning in people with chronic fatigue syndrome after 1 year. This follow-up study found that the beneficial effects of CBT and GET were maintained at follow-up (median 2-5 years).


ORIGINAL PACE STUDY - White, P. et al. (2011) Comparison of adaptive pacing therapy, cognitive behaviour therapy, graded exercise therapy, and specialist medical care for chronic fatigue syndrome (PACE): a randomised trial. The Lancet, 377(9768), 823-836

RESPONSE IN FAVOUR OF THE STUDY - Blog post from the Mental Elf (includes lots of references)


COMMENTS & CRITICISMS OF THE PACE TRIAL


http://www.virology.ws/meefs/


LOW AMBIENT TEMPERATURE & ICH

The INTERACT2 study was an international randomized controlled trial to assess the association of ambient temperature and risk of spontaneous intracerebral haemorrhage (ICH). The results indicate that exposure to low ambient temperature (°C) within several hours increases the risk of ICH.


CLINICAL & COST EFFECTIVENESS OF STEROIDS OR PTX FOR ALCOHOLIC HEPATITIS

Despite a paucity of good evidence, prednisolone and pentoxyfylline (PTX) have become widely used in alcoholic hepatitis (AH). The STOPAH trial results show that prednisolone reduces the risk of mortality in people with AH at 28 days, but this benefit is not sustained beyond 28 days. PTX had no impact on survival.


EFFECT OF ANIMAL-ASSISTED INTERVENTIONS ON DEPRESSION, AGITATION & QUALITY OF LIFE IN NURSING HOME RESIDENTS WITH COGNITIVE IMPAIRMENT OR DEMENTIA

A prospective, cluster randomized trial with a follow-up measurement 3 months after end of intervention. Subjects (n=58, male and female, aged 65 years or older, with a diagnosis of dementia or having a cognitive deficit) were randomized to either animal-assisted activities with a dog (AAA), or a control group with treatment as usual. A significant effect on depression and quality of life (QoL) was found for participants with severe dementia at follow-up. For QoL, a significant effect of AAA was also found immediately after the intervention. No effects on agitation were found.


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COULD YOUR HEARTBURN PILLS CONTRIBUTE TO KIDNEY DISEASE?

A recent study suggests that proton pump inhibitors (PPIs) may be linked to long-term kidney damage. PPIs work by lowering the amount of acid produced by the stomach. People who used PPIs were found to have a 20-50% higher risk of chronic kidney disease compared with non-users. The study doesn't establish a direct cause-effect relationship between the drugs and chronic kidney disease. However, people who took the drugs twice a day had a higher risk than those who took them once daily (46% vs. 15%). Other types of heartburn drugs, such as antacids and H2 blockers did not have this effect.

SOURCE: Lazarus, B. et al. (2016) Proton pump inhibitor use and the risk of chronic kidney disease. JAMA internal medicine, 176(2), 230-246

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REPORTS: CANADIAN AGENCY FOR DRUGS & TECHNOLOGIES IN HEALTH (CADTH)

Wellis, G. et al. (2016) Drugs for chronic hepatitis C infection: clinical review. Read related reports and summaries

Assasi, N. et al. (2015) Comparative value of erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) testing in combination versus individually for the diagnosis of undifferentiated patients with suspected inflammatory disease or serious infection: a systematic review and economic analysis

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HealthStats NSW provides information on:

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**SALIVA TESTS FOR CANCER MOVE CLOSER TO CLINICAL USE**

Over the past decade, David Wong of UCLA and his colleagues have been developing a method for detecting circulating tumour DNA in bodily fluids such as blood and saliva. The approach, known as a liquid biopsy, holds the promise of quicker, less invasive identification of cancers and easier tracking of disease status during the course of treatment. Read more...

**SELECTING AN OPEN ACCESS JOURNAL FOR PUBLICATION: BE CAUTIOUS**

This article discusses the background of open access (OA) journals and describes key considerations to distinguish between reputable publications and those that may lead authors astray. The authors conclude that despite controversy and concerns related to publishing in OA journals, these journals provide opportunities for researchers and clinicians to raise the profile of their work and ensure a robust, scholarly communication system. Read more...

**TRANSFORMING COCHRANE**

If Cochrane were a car, some might see it as a beige 1995 Volvo station wagon; incredibly safe, magnificently reliable, but in need of an update.

Cochrane has achieved a lot in the past 20 years: over 6500 reviews have been completed by a network of 30,000 contributors from 130 countries. It is recognised for the quality and rigour of its evidence syntheses, leadership in methods development and contribution to the world of evidence-based health care. But, as it settles into its third decade, we also know that if Cochrane is going to thrive, it needs to change. Content needs to be more useable, timely and relevant, and delivered without compromising on quality. To achieve this, Cochrane is transforming how it goes about its work. Read more...

**COCAINE ‘CAN MAKE BRAIN EAT ITSELF’**

A mouse study published in *PNAS* (Proceedings of the National Academy of Sciences) found that cocaine can trigger out-of-control ‘autophagy’, a process by which cells literally digest themselves. When it is properly regulated, autophagy provides a valuable clean-up service—getting rid of unwanted debris within the cell. But uncontrolled autophagy can lead to cell death. The researchers investigated whether an experimental drug (CGP3466B) was able to protect mouse nerve cells from cocaine death due to autophagy. The drug has previously been tested in clinical trials to treat Parkinson’s and motor neurone disease.

**SOURCE:** Guha, P. et al. (2016) Cocaine elicits autophagic cytotoxicity via a nitric oxide-GAPDH signaling cascade. *PNAS*, 113(14),1417-1422 Available via CIAR, but there is a 6 month embargo. Contact HNELHD Libraries to access this article.

**REVIEW OF MEDICAL INTERN TRAINING REPORT**

This review was established to examine the purpose of the internship in today’s health system and its effectiveness in equipping medical graduates to practise in a complex and changing healthcare environment. It also sought to examine the role of the internship in supporting graduates’ career choices and to identify mechanisms to expand intern training settings. Read more...

**APP TO DETECT AUTISM IN CHILDREN**

La Trobe University’s Olga Tenison Autism Research Centre has launched a free smartphone app called ASDetect that they say will help parents and caregivers to identify autism earlier (between 11-30 months). The app uses questions drawn from research by Dr Josephine Barbaro and features extensive video footage of children both with and without autism. It contains 3 age-appropriate assessments for children aged 13, 18 and 24 months. Read more...

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